### (19) World Intellectual Property Organization International Bureau



## ) | 1011 | 1111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 | 111 |

### (43) International Publication Date 15 February 2007 (15.02.2007)

**PCT** 

# (10) International Publication Number WO 2007/018592 A1

(51) International Patent Classification: C03B 33/09 (2006.01)

(21) International Application Number:

PCT/US2006/003394

(22) International Filing Date: 30 January 2006 (30.01.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

PCT/US2005/026739 28 July 2005 (28.07.2005) US PCT/US2006/000742

5 January 2006 (05.01.2006) US

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier applications:

 US
 us2005/026739 (CIP)

 Filed on
 Not furnished

 US
 us2006/00742 (CIP)

 Filed on
 Not furnished

(71) Applicant (for all designated States except US): GY-ROTRON TECHNOLOGY, INC. [US/US]; 2014 Ford Road, Unit K, Bristol, PA 19006 (US).

(72) Inventors; and

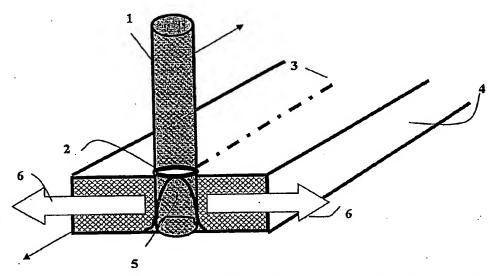
(75) Inventors/Applicants (for US only): SKLYAREVICH,

Vladislav [US/US]; 2701 Dudley Court, Bensalem, PA 19020 (US). SHEVELEV, Mykhaylo [UA/US]; 301 Heights Lane, Fresterville, PA 19052 (US).

- (74) Agent: CAROTHERS, Floyd, B.; Carothers And Carothers, 445 Fort Pitt Blvd., Suite 500, Pittsburgh, PA 15219 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US (patent), UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: A METHOD OF SEPARATING NON-METALLIC MATERIAL USING MICROWAVE RADIATION



(57) Abstract: A method of high speed cutting of non-metallic materials (14), preferably glass and laminated glass, is described. In the inventive method a concentrated microwave radiation (1) with appropriate frequency and power density is chosen so as to accomplish heating of at least one selected area (2) of the body at the required separating propagation path (3) to required temperature in a selected short time while ensuring that this temperature is large enough to create a thermal stress (6) through the thickness of the selected area that results in the separating of the body material. In one embodiment of the invention a method of high speed cutting laminated glass is described wherein concentrated microwave radiation is used for delaminating adhesive film before the step of separating the glass body.

07/018592 A1 III

### WO 2007/018592 A1



#### Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))
- of inventorship (Rule 4.17(iv))

### Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.